Course Number: ESCI 5490  
Instructor: Tony Wood

Credit Hours: 3 (3:0)  
Semester: Spring  
Year: 2012

Course Title: Advanced Topics - Environmental Management Systems

1. Course Description (Approximately 25 words)
This course explores the systems management approach used by businesses and governments to promote environmental quality and sustainability. EMS and ISO 14001 standards go beyond minimally acceptable environmental compliance.

2. Attach course outline or syllabus and a statement of course goals or objectives.
Course components will include:
- Introduction & Overview of EMS, ISO, and the ISO 14000 Standards
- Key Elements of EMS & ISO 14001 - Corporate Conformance
- Developing a preliminary EMS
- Effective Documentation for Environmental Management Systems
- Implementing and Auditing Environmental Management Systems
- Legal Compliance within the EMS

3. What group or groups of students is the course designed for?
This is a course recommended for graduate level ESCI majors and Public Administration majors who intend to work in mid-sized to large companies, major international industries, or federal governmental entities in an environmental or safety management, compliance, or environmental law capacity. Many employers are mandated or are voluntarily developing systems management approaches to their environmental health and safety programs.

Prerequisite: 3 semester hours in environmental or labor laws/regulations or permission of the instructor.

4. What is your best estimate of potential enrollment? What is the estimate based on?
10-15 students per semester, offered only during Spring Semesters. Attendance estimates are based upon the number of graduating ESCI seniors and graduate students who have completed the Environmental Regulations course (ESCI 4301/5302) and the fact that this would be an elective course.

5. What degree and/or teacher certification requirements will this course fulfill?
Elective for M.S. in Environmental Science or Masters in Public Administration

6. Are present library and other university resources adequate to support this course?
Yes.

7. Comments:

Department Action:  
Approve ________

Reject ________  
Date: ________

More information requested: __________________

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ESCI 5490: Issues in Environmental Science
Environmental Management Systems

Course Objectives:
Upon successful completion of this course students will be prepared for a role in organizational environmental management. Participation and study in this course will enable students the ability to:

- Understand the systems management approach
- Establish and implement an organizational EMS at all appropriate organizational levels
- Identify environmental aspects and impacts
- Conduct environmental management training
- Explain pertinent national (EO 13423) and international (ISO 14001) standards related to EMS
- Conduct environmental compliance reviews and audits
- Recognize environmental, energy, or transportation management excellence

Course Requirements:
- This course will include weekly reading assignments. Lectures and class discussions will be related to these assignments.
- Regular class attendance and class participation is expected. Individuals who must miss any class are responsible for obtaining notes, instructions, and assignments from other class members.
- Each student will be expected to identify a governmental, corporate, industrial, institutional, or university organization that they will use for EMS discussions during this course. The organization may be a real or imagined. If the selected organization is real then the student will be expected to have written permission of the organization manager to discuss EMS aspects and impacts with the class. TAMU-CC organizations are currently developing EMS. The selection of an organization must be submitted to the instructor no later than the second week of the class.
- Each student will prepare an EMS briefing on their selected organization. This briefing will include appropriate elements of the organization’s idealized EMS elements including aspects, impacts, targets, training, and a timeline for implementation. Students should be prepared to engage in discussions regarding their chosen EMS progress each week.
- Weekly reading assignments and website reviews will be completed.
- Three examinations will be given during the semester. Students are expected to be prepared and complete these exams on the scheduled exam dates. Students with an excused absence from the professor must make up the exam prior to the next class period.
- The course may include an opportunity to attend special lectures during the semester. Students will be responsible for knowing material covered by speakers scheduled during regular class times and may obtain extra credit for attending lectures which are outside of class times.

Prerequisites: Graduate standing. This course requires knowledge of U.S. environmental laws and regulations in the United States. Courses such as Environmental Laws & Regulations (either ESCI 4301 or ESCI 5302 or equivalent) or permission of the instructor is mandatory.
Evaluation Criteria:

- Class Participation 15%
- EMS Briefing on Selected Organization 30%
- EMS Interview Report 10%
- First Exam 15%
- Second Exam 15%
- Comprehensive Final Exam 15%

Special Graduate Credit Requirements:
In addition to the above requirements, each student will be required to interview one environmental professional with EMS experience. The student should discuss the organization’s status regarding EMS development and organizational attitudes toward EMS. A written summary of the interview must be submitted. This will be easiest with Federal institutions required to include stakeholder involvement but any organization with an existing or planned EMS may be selected.

Required Textbook:
"Environmental Management Systems: An Implementation Guide for Small and Medium Sized Organizations" published in December 2000 by the U.S. EPA, in cooperation with NSF International. This guide can be used by organizations of all sizes. The 201 page text can be downloaded from http://www.epa.gov/owm/iso14001/ems2001final.pdf. Other guidance and resource materials will be accessible from online resources.

Proposed Topics & Tentative Schedule:
Week 1
- Introductions & Expectations
- Textbook
- Systems Management Overview
- EMS Overview & Organization
- Designing the EMS

Week 2
- Organizational Involvement at all Levels
- Establishing the Environmental Policy Statement
- Establishing the EMS Team
- Basic & Supporting Operations
- Contractors & the EMS
- Necessary Expertise
- EMS Responsibilities
- Planning & Scheduling
Week 3
- Establishing the Environmental “Fenceline”
- Review of Environmental Regulations
- Environmental Training
- Gap Analysis

Week 4
- Environmental Aspects & Impacts
- Determining Significance of Impacts

Week 5
- Exam I

Week 6
- Systems Approach
- Linking Environmental Objectives & Programs
- Targets

Week 7
- Corrective Actions
- Organizational Structure
- New Environmental Process Review

Week 8
- Documentation
  - Compliance Logs
  - Pollution Prevention Logs
  - Operations Control Procedures
  - Operations Control Logs

Week 9
- Community Issues
- Stakeholder Communications

Week 10
- Exam II

Week 11
- Student Presentations/Review

Week 12
- Student Presentations/Review

Week 13
- Final Exam